

MATERIAL SAFETY DATA SHEET

PROKOZ INC.

Emergency Phone: 800-992-5994

Prokoz Inc.

Alpharetta, GA 30022

Effective Date: 20-Sept-05

Product Code: 90917

Clevis™

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Clevis™

COMPANY IDENTIFICATION:

Prokoz Inc.
100 North Point Center East, Suite 330
Alpharetta, GA 30022-8242

2. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW

Yellow powdered solid with a musty odor. May cause eye irritation with corneal injury. May cause skin irritation.

Toxic to aquatic organisms and birds.

EMERGENCY PHONE NUMBER: 800-992-5994

3. COMPOSITION/INFORMATION ON INGREDIENTS:

Mancozeb	CAS # 008018-01-7	60.0%
Myclobutanil	CAS # 088671-89-0	2.3%
Balance, Total, Including		37.7%
Calcium Lignosulfonate	CAS # 008061-52-7	
Ethylene Thiourea	CAS # 000096-45-7	
Hexamethylene Tetramine	CAS # 000100-97-0	
Clay (contains	CAS # 001332-58-7	
crystalline silica	CAS # 014808-60-7)	

4. FIRST AID:

EYE: Immediately flush eyes with water; remove contact lenses, if present after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

SKIN: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items, which cannot be decontaminated, including leather articles such as shoes, belts, and watchbands.

INGESTION: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Never give anything by mouth to an unconscious person.

INHALATION: Move person to fresh air; if effects occur, consult a physician.

NOTE TO PHYSICIAN: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES:

FLASH POINT: Not applicable

FLAMMABLE LIMITS

LFL: 0.16 oz/ft³ = ~160.18 g/M³ (estimate)

UFL: Not determined

EXTINGUISHING MEDIA: Use the following extinguishing media when fighting fires involving this material: carbon dioxide, dry chemical or water spray.

UNUSUAL HAZARDS: Pesticide particulates can become airborne. Combustion generates toxic fumes of the following: hydrogen sulfide, sulfur oxides, nitrogen oxides, and carbon oxides. Dusts at sufficient concentrations can form explosive mixtures with air. The minimum ignition temperature of dust cloud is 590°F (310°C) and of dust layer is 270°F (132°C).

FIREFIGHTING EQUIPMENT: Wear self-contained breathing apparatus (pressure demand NIOSH approved or equivalent) and full protective gear.

SPECIAL PROCEDURES: Contain run-off. Remain upwind. Avoid breathing smoke. Use water spray to cool containers exposed to fire.

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS/LEAKS: Sweep up small spills and place in a suitable container for disposal. Report large spills to Dow AgroSciences at 800-992-5994. Keep dust to a minimum. Keep out of sewers and open bodies of water.

Wear appropriate protective equipment when handling a spill of this material. If exposed to material during clean-up operations see Section 4 for actions to follow. Remove all contaminated clothing promptly. Wash all exposed skin areas with soap and water immediately after exposure. Thoroughly launder clothing before reuse. Do not take clothing home to be laundered.

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7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

HANDLING: Do not handle material near food, feed or drinking water. Avoid high concentrations of dust in air and accumulation of dust on equipment. An airborne dust of this material can create a dust explosion. When handling and processing this material local exhaust ventilation may be required to control dust and reduce exposure to vapors. To prevent dust explosions employ bonding and grounding for operations capable of generating static electricity. Protect all equipment from explosions by following the guidelines in NFPA-68 and NFPA-69. For electrical equipment follow local codes and electrical classification NFPA-70 (the National Electrical Code), class II, division 2, group G.

STORAGE: Do not store this material near food, feed or drinking water. Store in a well-ventilated area. Store in a dry area. Store out of direct sunlight in a cool place. DO NOT allow to become wet or overheated in storage; decomposition, impaired activity or fire may result. Material is combustible; do not ignite. Store bagged material only on pallets no more than 3 high. Provide access aisles for each 2 rows. Loose bags should not be stacked more than 2x2x2 meters. Dense packing of unvented stacks of bags may lead to product decomposition posing a fire hazard. Decomposition produces a foul odor. Check for hot containers and immediately remove to open area for disposal.

OTHER: Completely empty bag into application equipment. Dispose empty bag in a sanitary landfill or by incineration as allowed by state and local authorities. Avoid inhalation of smoke if incinerated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

EXPOSURE GUIDELINE(S):

Mancozeb: Dow AgroSciences Industrial Hygiene Guide is 1 mg/M³, dermal sensitizer.

Myclobutanil: Dow AgroSciences Industrial Hygiene Guide is 1 mg/M³ TWA and 3 mg/M³ STEL.

Clay: The ACGIH TLV is 2 mg/M³, respirable, A4. The OSHA PEL is 15 mg/M³ total dust and 5 mg/M³ respirable fraction.

Silica, crystalline: ACGIH TLV is 0.1 mg/M³ respirable) for tripoli, and fused silica, 0.05 mg/M³ (respirable) for cristobalite, tridymite, and quartz. Quartz has an A2 designation. OSHA PEL is (30 mg/M³)/(%SiO₂+2) total dust, (250 mppcf)/(%SiO₂+5) or (10 mg/M³)/(%SiO₂+2) respirable for quartz, tripoli, and fused silica; the value for cristobalite and tridymite is 1/2 the value calculated from the respirable dust formula for quartz.

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE/FACE PROTECTION: Use chemical goggles.

SKIN PROTECTION: Use gloves chemically resistant to this material.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. If respiratory irritation is experienced, use a NIOSH approved air-purifying respirator for dust.

APPLICATORS AND ALL OTHER HANDLERS: Refer to the product label for personal protective clothing and equipment.

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9. PHYSICAL AND CHEMICAL PROPERTIES:

COLOR: Yellow

STATE: Powdered solid

ODOR: Musty

pH: 6 - 7 Aqueous suspension

VISCOSITY: Not applicable

SPECIFIC GRAVITY (Water = 1): 0.3 to 0.5 g/cc (bulk density)

VAPOR DENSITY (Air = 1): Not applicable

VAPOR PRESSURE: Not applicable

MELTING POINT: 378°F (192°C) - Decomposes

BOILING POINT: Not applicable

SOLUBILITY IN WATER: Dispersible

PERCENT VOLATILITY: 0%

EVAPORATION RATE (Bac = 1): Not applicable

10. STABILITY AND REACTIVITY:

STABILITY: This material is stable under normal storage conditions. Keep away from moisture, heat or flame.

INCOMPATIBILITY: Avoid contact with acids and oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition may yield the following: carbon disulfide, hydrogen chloride and hydrogen sulfide.

HAZARDOUS POLYMERIZATION: Not known to occur.

11. TOXICOLOGICAL INFORMATION:

POTENTIAL HEALTH EFFECTS: This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

EYE: May cause moderate eye irritation with corneal injury. Dust may irritate eyes.

SKIN: Prolonged contact may cause slight skin irritation with local redness. Prolonged skin contact may cause allergic skin reaction in a small proportion of individuals. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD₅₀ for skin absorption in rabbits for a similar material is >5,000 mg/kg.

INGESTION: Low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. The oral LD₅₀ for rats is >5,000 mg/kg.

INHALATION: Dust may cause irritation of the upper respiratory tract (nose and throat) and lungs. Hexamethylene Tetramine may cause allergic respiratory response in a small proportion of individuals. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: For mancozeb, in animals, effects have been reported on the following organs: thyroid, liver, nervous system, and eyes. For myclobutanil, in animals, effects have been reported on the following organs: testes, adrenal gland, kidney and thyroid.

CANCER INFORMATION: Mancozeb has caused cancer in laboratory animals. Myclobutanil did not cause cancer in laboratory animals. This mixture contains crystalline silica, which is listed as a carcinogen for hazard communication purposes under OSHA Standard 29 CFR Part 1910.1200. Crystalline silica is listed by IARC and NTP. Crystalline silica has been shown to cause cancer in laboratory animals and humans.

TERATOLOGY (BIRTH DEFECTS): Mancozeb has caused birth defects in laboratory animals only at doses toxic to the mother. Myclobutanil did not cause birth defects in laboratory animals. Has been toxic to the fetus in laboratory animals at doses non-toxic to the mother.

REPRODUCTIVE EFFECTS: Mancozeb did not interfere with reproduction in laboratory animals. In laboratory animal studies with myclobutanil, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

MUTAGENICITY: For mancozeb, in-vitro genetic toxicity studies were predominantly negative and animal genetic toxicity studies were negative. For myclobutanil, in-vitro and animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE:

MOVEMENT & PARTITIONING:

Based largely or completely on information for mancozeb and myclobutanil.

No relevant information found.

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DEGRADATION & PERSISTENCE:

Based largely or completely on information for myclobutanil.
The photolysis half-life in soil is <2 days.

ECOTOXICOLOGY:

Based largely or completely on information for mancozeb.
Material is very highly toxic to aquatic organisms on an acute basis (LC₅₀ or EC₅₀ is <1 mg/L in most sensitive species tested).
Material is practically non-toxic to birds on a dietary basis (LC₅₀ is >5000 ppm).
Material is practically non-toxic to birds on an acute basis (LD₅₀ is >2000 mg/kg).

Based largely or completely on information for myclobutanil.
Material is highly toxic to aquatic organisms on an acute basis (LC₅₀ or EC₅₀ is between 0.1 and 1 mg/L in the most sensitive species tested).
Material is practically non-toxic to birds on a dietary basis (LC₅₀ is >5000 ppm).
Material is slightly toxic to birds on an acute basis (LD₅₀ is between 501 and 2000 mg/kg).
Acute contact LD₅₀ in honeybee (*Apis mellifera*) is >100 µg/bee.

13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION:

U.S. DEPARTMENT OF TRANSPORTATION (DOT) INFORMATION:

For non-bulk shipments by road and air:

This material is not regulated for transport.

For non-bulk shipments by vessel:

ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.(MANCOZEB)/9/UN3077/PGIII/MARINE POLLUTANT(MANCOZEB)

For bulk shipments:

ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.(MANCOZEB)/9/UN3077/PGIII/MARINE POLLUTANT(MANCOZEB)/RQ(ETHYLENEBIS-DITHIOCARBAMIC ACID, ETHYLENE THIOUREA)

15. REGULATORY INFORMATION:

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations.

U.S. REGULATIONS

SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

CHEMICAL NAME	CAS NUMBER	CONCENTRATION
Mancozeb	008018-01-7	60.0%
Myclobutanil	088671-89-0	2.3%
Ethylene Thiourea	000096-45-7	<0.1%

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard

A delayed health hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

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OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CALIFORNIA PROPOSITION 65: The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986:

WARNING: This product contains a chemical(s) known to the State of California to be a reproductive and developmental toxic. The chemical is myclobutanil (CAS # 088671-89-0).

WARNING: This product contains a chemical known to the State of California to cause cancer. The chemical is crystalline silica (CAS # 014808-60-7).

WARNING: This product contains trace levels of a component known to the state of California to cause cancer, birth defects, or other reproductive harm. The component is Ethylene thiourea (000096-45-7)

WARNING: This product contains a component known to the state of California to cause cancer. The component is Mancozeb (008018-01-7)

STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
Myclobutanil	088671-89-0	NJ2
Ethylene Thiourea	000096-45-7	NJ1 NJ2 NJ3 PA1 PA2 PA3
Hexamethylene Tetramine	000100-97-0	NJ3
Ethylenebisdithiocarbamic Acid	000111-54-6	NJ3 PA1 PA3

(Ethylenebisdithiocarbamic Acid is a Generic Group Name or Synonym for Mancozeb)

NJ1=New Jersey Special Health Hazard Substance (present at greater than or equal to 0.1%).

NJ2=New Jersey Environmental Hazardous Substance (present at greater than or equal to 1.0%).

NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).

PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).

PA2=Pennsylvania Special Hazardous Substance (present at greater than or equal to 0.01%).

PA3=Pennsylvania Environmental Hazardous Substance (present at greater than or equal to 1.0%).

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health 2
Flammability 1
Reactivity 0

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND): This product contains the following substance(s) listed as "Hazardous Substances" under CERCLA, which may require reporting of releases:

Chemical Name	CAS#	RQ	% in Product
Ethylene Thiourea	000096-45-7	10 lbs.	0.1%
Ethylenebisdithiocarbamic Acid	000111-54-6	5000 lbs.	60.0%

(Ethylenebisdithiocarbamic Acid is a Generic Group Name or Synonym for Mancozeb)

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RCRA Categorization:

U.S. EPA Hazardous Waste Number:
U114 (Ethylenebisdithiocarbamic Acid)

16. OTHER INFORMATION:

MSDS STATUS: Revised sections: 5
Replaces MSDS Dated: 8-17-05

The Information Herein Is Given In Good Faith, But No
Warranty, Express or Implied, Is Made. Consult Prokoz Inc.
for Further Information.